Universidad Nacional Autónoma de México (NAM)
Team chikis/ Education Building / 5th april

WATER TRAIL SCHOOL
Project summary

Project Data

Location: Mexico City, Xochimilco, Mexico
Climate Zone: mixed-humid (4a; ASHRAE)
Lot Size: 25, 907.80 ft²
Building Size: 13.850 ft²
Occupancy: 75 students, (290 ft²/ person)
Construction Cost: $25 USD/ft²
Target Source EUI: 12 kBtu/ft²/yr
Average Utility Cost:$0/month
Annual Carbon Emissions: 16.80 lb Co2e/ft²/yr

Technical specifications

R-values

Standard Wall: 33.33
Standard ceiling: 26.31
Standard window: 21.46
Standard floor: 29.05

Ventilation:

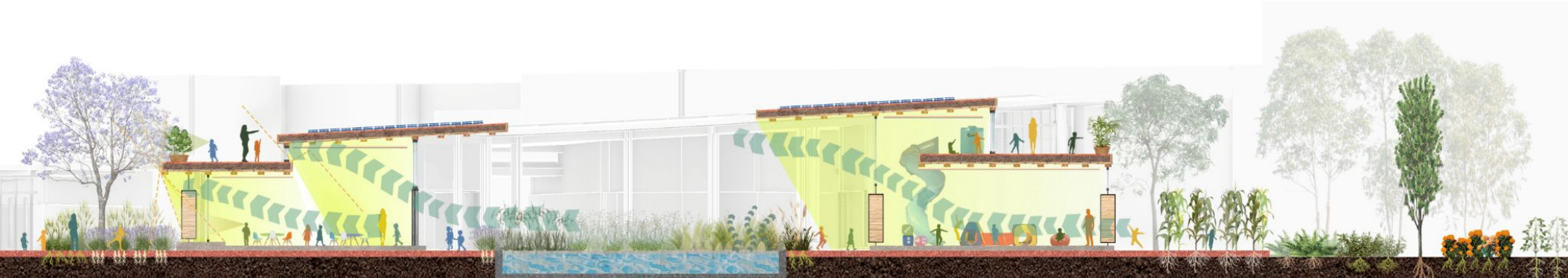
On-Site PV: 26 panels (74, 880 kW/year roof-mounted)

On-Site Hydropower: 1,872 kW/year

This school is meant to dignify life on a very important site such as Xochimilco by implementing a system of interactive education, with three design guidelines: energy, water and permaculture.

All process of energy generation and water cleaning is meant to be evident and interactive, so that kids can be part of it.

Our project is meant to be the initial of a replicable system of a school that uses natural resources to provides itself of energy while cleaning the water trails that surrounds it.



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Design Highlights

The design gives priority to the relationship with the lake
resulting in modules arranged around two central squares covered by a habitable roof.

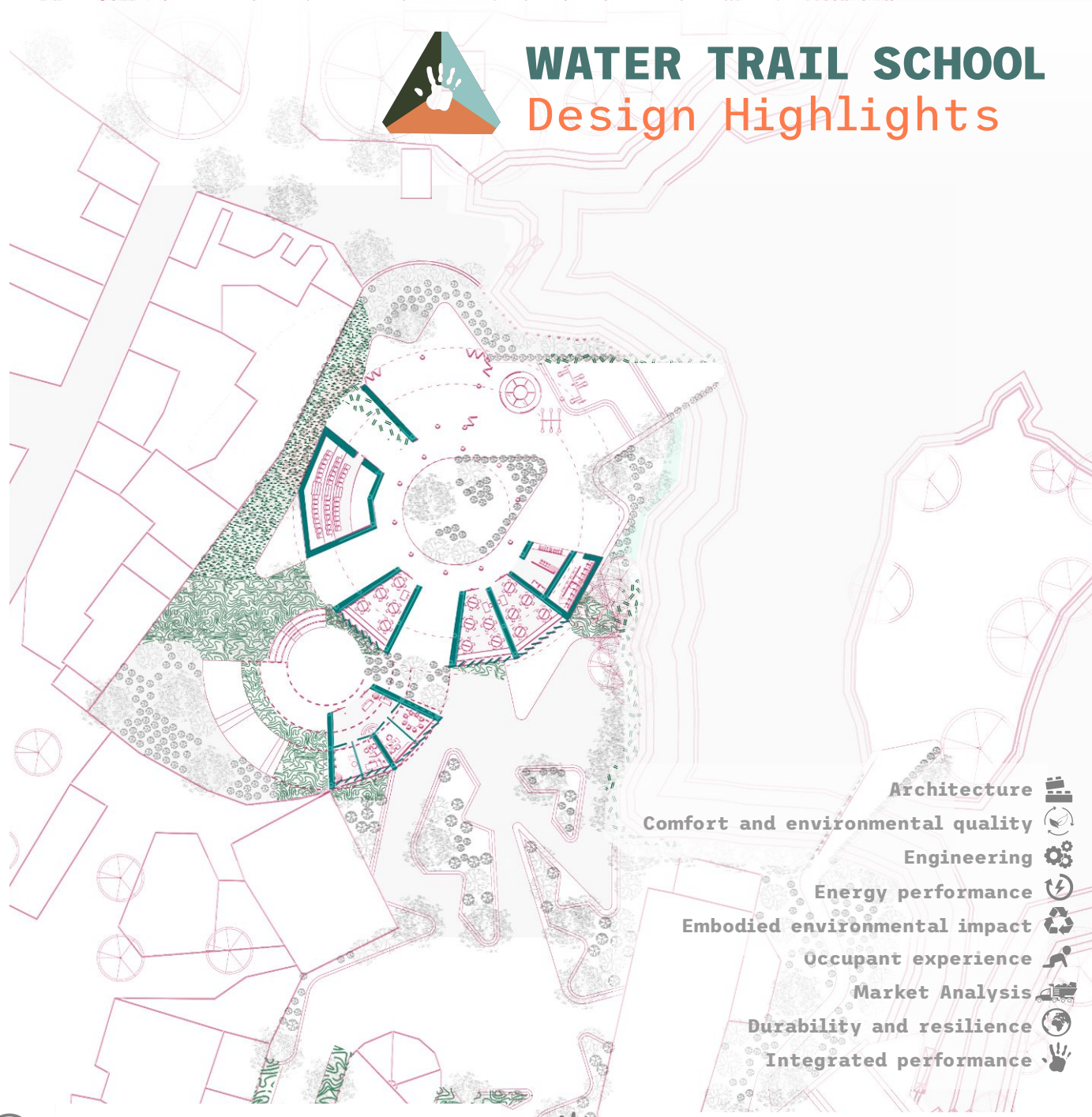
Suitable microclimates to provide thermal comfort and indoor air quality
by natural ventilation systems and natural lighting mainly.

Management of natural resources
water; by filtering it through bioswales
construction systems; retaking the vernacular architecture

Provide energy into project and supply excess into the community
by installation of PV systems and generating through games for children

Reduce carbon footprint
because of the use of 88% of natural and local materials, and maintenance managed by the community.

Interactivity for the children
by making them participate in generating energy process and self-consumption of vegetables through permaculture



Architecture
Comfort and environmental quality
Engineering
Energy performance
Embodied environmental impact
Occupant experience
Market Analysis
Durability and resilience
Integrated performance

All materials sourced by local suppliers
in a radius less than 8,000 feets, to reduce transportation and raw material costs.

Replicability in other sites of the city
improving resilience and helping to mitigate the problems of Xochimilco

Water trial school is a systemic project
so that each element of the project is interrelated for the proper functioning of the building